AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): An image configuring apparatus comprising an object image configuring means, which reads image data of a plurality of reduced object images from a reduced image recording means for recording image data of a plurality of reduced object images obtained by photographing an object as using a compound-eye camera that focuses a plurality of reduced object images on a photo detector through micro lens array having a plurality of micro lenses arrayed therein, and configures a single object image based on said image data and then outputs its image data,

~~wherein~~ said object image configuring means ~~is characterized by~~ comprising:

a generating means of initial object image for generating an initial image data of a single object image based on an image data of a plurality of said reduced object images;

a reduced image estimating means for estimating an estimated image of each of said reduced object images from an image data of a provided single object image based on a geometric projection process;

an object image updating means for updating an image data of said single object image provided in said reduced image estimating means by projecting a difference between said estimated image of each reduced object images and each of said reduced object images in an inverse process of said geometric projection process; and

an iterative control means for firstly giving said initial image data to said reduced image estimating means as an initial value of an image data of said single object image, and then repetitively conducting a estimating processing of said reduced image estimating means as well as a updating processing of said object image updating means until said difference satisfying a predetermined condition, then outputting an image data of said single object image at the time of said difference satisfying said predetermined condition as a final image data of an object image.

Claim 2 (original): An image configuring apparatus according to Claim 1, wherein said object image configuring means further comprises a shift amount calculating means for calculating a shift amount in regard to a gap of relative positions between said reduced object images through correlation calculation between said reduced object images by using an image data of a plurality of said reduced object images.

Claim 3 (original): An image configuring apparatus according to Claim 2, wherein said object image configuring means further comprises a projection process deriving means for obtaining a conversion equation indicating said geometric projection process employed in said reduced image estimating means based on said shift amount obtained in said shift amount calculating means.

Claim 4 (currently amended): An image configuring apparatus according to ~~Claims~~ Claim 2 ~~or 3~~, wherein said generating means of initial object image in said object image configuring means generates an image data of a single object image by arranging a plurality of said reduced object images onto a same area based on said shift amount obtained in said shift amount calculating means, and then generates an initial image data of said single object image by interpolating blank pixels with respect to said image data.

Claim 5 (currently amended): An image configuring method for configuring a single object image based on an image data of a plurality of reduced object images obtained by phpotographing an object as using a compound-eye camera that focuses a plurality of reduced object images on a photo detector through micro lens array having a plurality of micro lenses arrayed therein, ~~and characterized by~~ comprising the steps of:

~~a generating process of initial object image for~~ generating an initial image data of a single object image based on an image data of a plurality of said reduced object images;

~~a reduced image estimating process for~~ estimating an estimated image of each of said reduced object images from an image data of a provided single object image based on a geometric projection process;

~~an object image updating process for~~ updating an image data of said single object image provided in said reduced image estimating process by projecting a difference between estimated images of each of said reduced object images and each of said reduced object images in an inverse process of said geometric projection process; ~~and~~

~~an iterative control process for firstly giving~~ providing said initial image data to said reduced image estimating process as an initial value of an image data of said single object image~~,~~;

~~and then~~ repetitively conducting said reduced image estimating process as well as said object image updating process until said difference satisfying a predetermined condition~~,~~; and

~~then~~ outputting an image data of said single object image at the time of said difference satisfying said predetermined condition as a final image data of an object image.